

**IN THE CLAIMS**

Please rewrite the claims as follows:

1. (Currently Amended) An imaging system for determining the kinematics of an object, comprising:

an ultrasonic trigger operable to determine the movement of the object, wherein the ultrasonic trigger comprises at least one emitter and at least one receiver, and wherein the movement of the object comprises the velocity and spatial position of the object; [[and]]

a computing device operatively connected to the ultrasonic trigger and capable of receiving the velocity and spatial position of the object;

a camera an imaging device operatively connected to the ultrasonic trigger computing device and capable of capturing to capture consecutive optical images of one or more objects the object, wherein the imaging device receives a dwell time and number of consecutive optical images based on the movement of the object.

2. (Original) The imaging device according to claim 1, wherein the object comprises at least one of a golf ball and a golf club.

3. (Original) The imaging device according to claim 1, wherein the ultrasonic trigger emits sound waves having a frequency between about 10 and about 500 KHz.

4. (Original) The imaging device according to claim 1, wherein the ultrasonic trigger emits sound waves having a frequency between about 100 and about 200 KHz.

5. (Previously Presented) The imaging device according to claim 1, wherein the ultrasonic trigger emits ultrasonic waves over an area of sonification that is substantially circular and has a diameter of between about 6 inches and about 2 feet.

6. (Previously Presented) The imaging device according to claim 1, wherein the ultrasonic trigger emits ultrasonic waves having a beam angle that is between about 1 and about 30 degrees.

7. (Previously Presented) The imaging device according to claim 6, wherein the beam angle is between about 5 and about 15 degrees.
8. (Original) The imaging device according to claim 1, wherein the ultrasonic trigger emits sound waves periodically.
9. (Original) The imaging device according to claim 8, wherein the periodic sound waves comprise pulses having a duration between about 10 and about 200 microseconds.
10. (Original) The imaging device according to claim 8, wherein the periodic sound waves comprise pulses, wherein the time period between the pulses is between about 100 and about 5000 microseconds.
11. (Original) The imaging device according to claim 8, wherein the periodic sound waves comprise pulses, wherein the time period between the pulses is greater than or equal to twice the distance from the ultrasonic trigger to a target area.
12. (Previously Presented) A system for simultaneously measuring kinematics of a golf club and a golf ball during a golfer's striking of a golf ball, the system comprising:
  - a first camera and a second camera, each of the first and second cameras focused toward a predetermined field of view;
  - a golf club having at least one optical marker;
  - a golf ball within the predetermined field of view; and
  - an ultrasonic trigger that emits ultrasonic waves along a path of a golf club swing;
  - a computing device that is operatively connected to the ultrasonic trigger and estimates the golf club speed based on output from the ultrasonic trigger, wherein the first and second cameras capture optical images of at least one of the golf ball and golf club based on the estimated golf club speed.
13. (Original) The system according to claim 12, wherein the ultrasonic trigger emits sound waves having a frequency between about 10 and about 500 KHz.
14. (Previously Presented) The system according to claim 12, wherein the ultrasonic trigger emits ultrasonic waves over an area of sonification that is substantially circular and

has a diameter of between about 6 inches and about 2 feet.

15. (Previously Presented) The system according to claim 12, wherein the ultrasonic waves have a beam angle that is between about 1 and about 30 degrees.

16. (Original) The system according to claim 12, wherein the ultrasonic trigger emits sound waves periodically.

17. (Original) The system according to claim 16, wherein the periodic sound waves comprise pulses having a duration between about 10 and about 200 microseconds.

18. (Original) The system according to claim 16, wherein the periodic sound waves comprise pulses, wherein the time period between the pulses is between about 100 and about 5000 microseconds.

19. - 23. (Canceled)

24. (Currently Amended) An imaging system for determining the kinematics of an object, comprising:

an ultrasonic trigger comprising an emitter and a receiver, wherein the emitter emits ultrasonic waves along a path of motion of the object, and wherein the ultrasonic trigger determines the position and velocity of the object;

a computing device operatively connected to the ultrasonic trigger that determines the position and velocity of the object based on output from the receiver and calculates a dwell time for consecutive optical images based on the position and velocity of the object; and

an imaging device operatively connected to the computing device that captures consecutive optical images of one or more objects based on the dwell time.

25. (Previously Presented) The imaging system of claim 24, wherein the ultrasonic waves have a beam angle that is between about 1 and about 30 degrees.

26. (Previously Presented) The imaging device of claim 25, wherein the beam angle is between about 5 and about 15 degrees.

27. (Previously Presented) The imaging device of claim 24, wherein the ultrasonic waves comprise pulses having a duration between about 10 and about 200 microseconds.

28. (Previously Presented) The imaging device of claim 24, wherein the ultrasonic waves comprise pulses having a time period between the pulses of about 100 to about 5000 microseconds.